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Public Expenditure on Education: A Macroeconomics Analysis of Fund Allocation and Policy Implementation in Gujarat

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Title of the Thesis	**:**	**Public Expenditure on Education: A Macroeconomic Analysis of Fund Allocation and Policy Implementation in Gujarat**	
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1. ABSTRACT

This study aims to investigate the relationship between public expenditure on education and economic growth with different dimensions of human development. The economic growth depends upon the spending in the education sector which determines the priority given by the government. The priority of the government shows the efficacy of the government in terms of spending and the effective expenditure on education evidence the efficiency of government spending on the education sector. Public expenditure on education is fruitful in many ways especially when it is utilized in an optimum manner, and the optimum utilization of education expenditure is determined in terms of effective education policy implementation.

This study has been carried forward with primary and secondary data. The result of this study has been analysed with the help of parametric and non-parametric test. The finding of this research revealed the positive and significant contribution of public expenditure on education on economic growth and human development. In terms of efficiency, the states with higher income are more efficient than the low-income group states. Though the efficiency of higher income group is high, the expenditure on education is less as compared to the less efficient states. The reason is, the higher income group states focused more on privatization. That's why the efficiency score is higher in terms of input and output.

The efficient utilization of resources is the key indicators of effective education policy implementation. The education policy focused more on technology-based education. Gujarat has adopted ICT based education named Gyankunj that incorporated more technological tools in their educational system. The analysis revealed the positive predicted purposeful implementation of ICT into the classroom. The result of descriptive statistics states the positive purposeful implementation of Gyankunj into the classroom. Teachers belief that after the implementation of ICT students' performance has increased. The students learn in optimum ways. The use of ICT provides opportunities for every student to be more active, better and to have greater motivation. This competency might become incompetent due to technological default. To become competent and efficient utilization of resources is only possible when the government do expenditure on education efficiently. This efficient utilization of resources leads to human development which leads to the economic growth of a nation.

2. INTRODUCTION

Public expenditure refers to the expenditure incurred by central, state and local government to fulfil the collective social wants of the society. Public expenditure is necessary for the growth of the economy, human capital formation and human development. Public expenditure affected by social, economic and political variables. Among all these, education is considered as a social good and one of the most important endogenous variables, which is an effective medium for holistic human development. Public expenditure on education plays a key component role to accelerate economic growth. All nation governments are doing expenditure on education because education is inevitable to strengthen social fabric establishment. Education expenditure covers expenditure on schools, universities and other public institutions delivering or supporting educational services (OECD). Literacy is one of the key indicators of social development. To achieve high literacy rates, education policies play an important role. It is very important to see that the policies are well dignified & implemented. Spending on the education sector also illuminates the importance given by the government. Educational spending becomes important due to demographic transition, where most of the population is less than 25 years of age and for the population living in rural areas, who cannot afford the fees of private schools. In countries like India where over 69 per cent of the population lives in a rural area (Census 2011)[1] and 25.7 per cent of the rural population live below the poverty line, while 13.7 per cent of the urban population lives below the poverty line (according to Mospi)[2]. These populations depend on the government, that is why government expenditure becomes important. This population cohort can't be ignored. So, uplifting this population and reducing the "Out-of-pocket expenses" of households (especially in rural areas) Public expenditure becomes a necessary investment in education

3. LITERATURE REVIEW

Public expenditure on education is widely accepted as a booster in the economic growth of a nation. Many studies, which are conducted at the international level and national level, show the positive and significant

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Orgi. (n.d.). Census of India website : Office of the Registrar general & CENSUS COMMISSIONER, INDIA. Retrieved March 04, 2020, from https://censusindia.gov.in/2011-prov-results/paper2/data_files/india/paper2_1.pdf

Note 1 According to Census of India report the total population of India is 1210.2 million. Out of this rural population stand at 833 million which is around 69 percent of the total population.

[2]Mospi, G. (2014). Women Men In India. Retrieved from http://mospi.nic.in/sites/default/files/reports_and_publication/cso_social_statices_division/Chapter_3_2014.pdf

contribution of public expenditure on education on economic growth (Sarania, 2020; Bhattacharyya, 2019; Ifa & Guetat, 2018; Mekdad et al., 2014; Mercan & Sezer, 2014; Mukit, 2012; Avinash, 2017; Muktdair-Al-Mukit, 2012). Not only the public expenditure on education leads to economic growth but public expenditure on the social sector, health and infrastructure also lead to the economic growth of a nation (Agrawal, 2018; Xhindi, 2020; Ekpung, 2014).

Public expenditure on education not only leads to economic growth but it has a significant impact on human capital formation also which helps in human development (Wuyah and Ahmad, 2016). Many variables are critical factors for human development and education is one of those factors which are critical for human resource development. Education significantly impacts human development and any sectorial changes in education affect the human development index positively or negatively (Edem, 2014). Several studies talk about public expenditure that positively impacts the human development index (Maharda & Aulia, 2020; Agarwal, 2015; Mittal, 2016).

The spending in the education sector determines the priority given by the government. The priority of the government shows the efficacy of the government in terms of spending and the effective expenditure on education evidence the efficiency of government spending on the education sector (Patel, 2019). So, this becomes important to analyses which government is efficient in spending on the education sector. Determining public education efficiency becomes essential because small changes in the efficiency of public spending could have a significant impact on aggregate productivity growth and Gross State Domestic Product levels. Therefore, the necessary efficiency and comparing input-output combinations of different decision-making units becomes a central and state challenge (Herrera and Ouedraogo, 2018). Efficient government spending can generate adequate returns in terms of contribution to economic growth (Šonje, 2018). Many works of literature confined that public expenditure on education as a share of GDP registered a significant remark. The volume of government expenditure on education also experienced a strong improvement (Miningou, 2019). Despite the progressing terms of making financial resources available for education, educational outcomes did not experience similar trends (Miningou, 2019). So here the question arises: what are the states with the highest efficiency levels that could potentially serve as benchmarks for other States? How efficiently is the state utilizing its resources? Which Indian states have the highest efficiency? The efficiency has been judged based on the population enrolled and literacy rate achieved by the population for the age group of 6-14, 15-19 and 20-24.

Public expenditure on education is only fruitful when it is utilized in the best manner, and the best utilization of education expenditure is determined in terms of effective education policy implementation. The implementation of education policy is to be realistic and effective when there are an inevitable interrelation and interaction of administrative and political forces (Paul, 1949). The government focused on the quality of education by implementing Information and Communication Technology (ICT) tools in schools. It is

believed that technology in schools can bring the education sector from the Dark Age to the light age (Suryani, 2010). This is because the implementation of ICT bridges the digital gap among students and significantly affects the overall development of the students and teachers. Considering these points, the Gujarat government has implemented the Gyankunj project at an elementary level (class 1 to 8). In this research, the Gyankunj project has been decided to evaluate because it integrated the concept of computer-aided learning (CAL) and Information and Communication Technology (ICT) using multimedia and technology tools for teaching-learning processes. With the help of this research, an attempt has been made to analyses how effectively the Gyankunj has been implemented. Are the teachers and students getting any benefits with the help of ICT? Are they satisfied with the technology tools which are provided in the schools? So, to answer these questions, the Gyankunj policy has been analyzed.

This research has reviewed various literature which is available at the international, national and state level and decided to fill the knowledge gap and population gap. It has been identified as an apparent knowledge gap in the prior research concerning the allocation of the fund on education, and another knowledge gap is related to the contribution of public expenditure on education in human development. Second, based on prior research, there is a population gap. The school and the college-going population appears to be important and worthy of investigation in their literacy, enrollment and per-pupil expenditure.

4. OBJECTIVES

Objectives are always constructing a path for finding a final destination. This path is constructed by the research questions. The research questions of the present study are: (1) What is the trend of public expenditure on education? (2) What is the pattern of fund allocation in education? (3) What are the macroeconomic education policies? (4) Is the state government of India doing efficient expenditure on education? (4) How much is the government spending per student? (5) Is there any relationship between public expenditure on education and human development? (6) What is the position of the efficient states in the Human Development Index?

To reach at the final destination research objectives has been formulated. The objectives of the study are:

- To analyze the trend of public expenditure on education and its effect on economic growth.
- To review the macroeconomic policies and allocation of the funds in Gujarat
- To determine the efficiency of public expenditure on education in India
- To analyze the relationship between public expenditure on education and Human Development Index.

5. RESEARCH METHODOLOGY

This research is empirical, analytical, and descriptive in nature, and it has explored two dimensions of data collection methods that are primary and secondary. The information has been collected through structured questionnaires, focused group discussion, interview method, observation technique etc. For the selection of the districts, stratified random sampling has been used. Total 6 primary schools are undergoing this research. Total 120 students, from standard 5th, 6th, 7th and 8th and 12 teachers are selected. The schools, teachers and students are selected with the help of a random sampling technique.

The secondary data has been collected from the finance department of Gujarat, Social and Economic Review of Gujarat, Reserve Bank of India Publications-Handbook of Statistics on the Indian States, DISE, AIHSE, Census report, Primary, Secondary and Higher Secondary Education, Department of Gujarat, Directorate of Economics and Statistics, Ministry of Human Resource and Development of India, Global Lab Data, Vidhan Sabha library.

6. BRIEF OVERVIEW OF WORK DONE

OBJECTIVE 1: TO ANALYSE THE TREND OF PUBLIC EXPENDITURE ON EDUCATION AND ITS EFFECT ON ECONOMIC GROWTH.

This study is descriptive and analytical in nature and based on secondary data. This research uses time-series data for the period 1998-2017 and based on secondary data. The data has been collected from the finance department of Gujarat, Social and Economic Review of Gujarat, Reserve Bank of India Publications-Handbook of Statistics on the Indian States, DISE, AIHSE, Census report, Primary, Secondary and Higher Secondary Education, Department of Gujarat, Directorate of Economics and Statistics, Ministry of Human Resource and Development of India, Global Lab Data, Vidhan Sabha library. The study divided into two sections. The first part analysed the trend of public expenditure on education and GSDP.

Statistical Method and tools

To study the trend analysis of public expenditure on education and GSDP, Compounded Annual Growth Rate and aggregate expenditure has been calculated.

In this study, the production function model has been used to investigate the impact of public expenditure on education and GSDP growth.

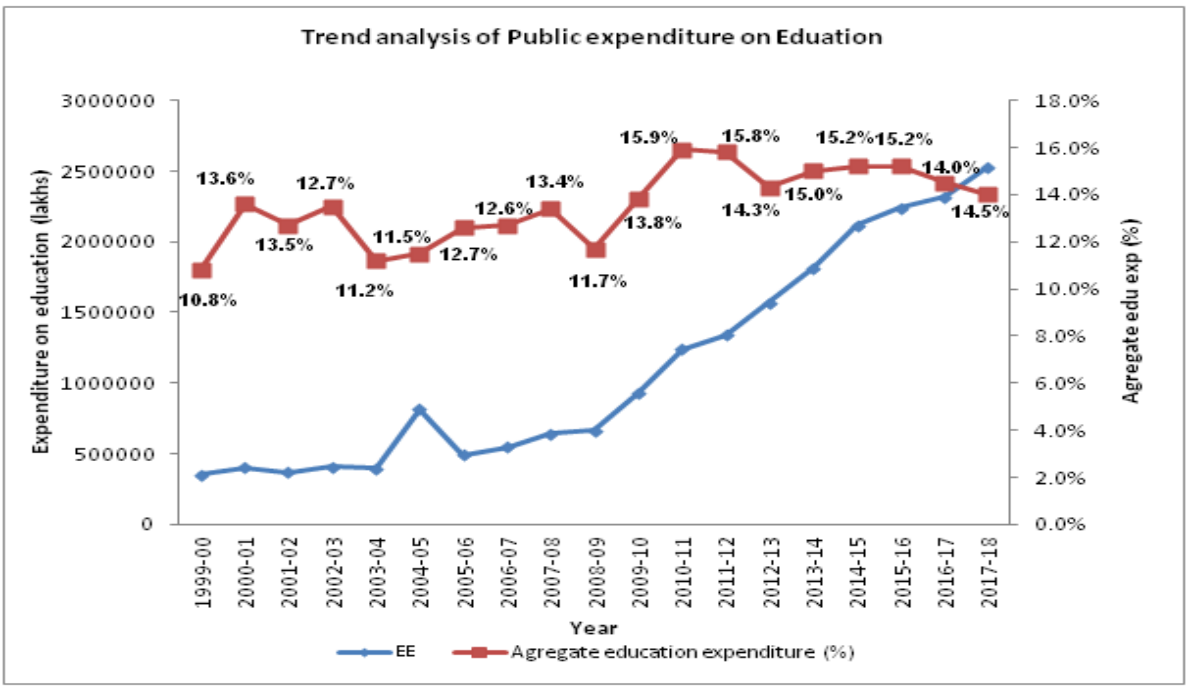
$$Y = f(EDU) \qquad (1)$$

The equation is converted in logarithm form then the Ordinary Least Square (OLS) regression model has been estimated for the growth equation. The OLS growth equation

$$LY_t = \beta_0 + \beta_1 LEDU_t + \varepsilon_t \qquad (2)$$

The fluctuating trend in any variables indicates the non-stationary of data and spurious regression. So, to avoid spurious regression situations and to check the stationary and non-stationary of the data **Augmented Dickey and Fuller (ADF) unit root test** has been implemented.

TREND ANALYSIS OF PUBLIC EXPENDITURE ON EDUCATION



This figure represents two series; the one with an upward trend shows the nominal expenditure on education, which include expenditure on primary, secondary and higher education. It shows that in the nominal term public expenditure on education has increased over the period. This expenditure is stable from 1998 to 2003. Expenditure on education is highest in the year 2004-05 which is 51% as compared to the previous year.

The other series indicates an aggregate of total expenditure on education. It represents the actual expenditure on education. The aggregate expenditure on education has a fluctuating trend. We get the inverted (∩) U- shape curve which represents that the aggregate expenditure on education is increasing at a diminishing rate. It is declining at a minimum rate.

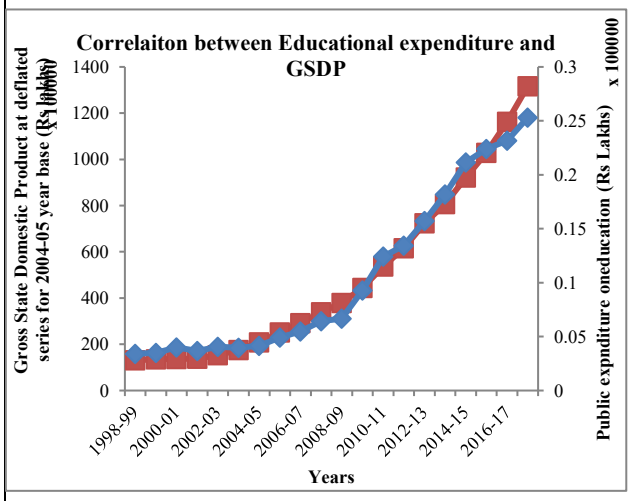
We also observe that expenditure on education is stringent at 15%. From 2015 to 2017 the spending has declined. One of the main justifications behind this constant spending on education is the number of schools and enrollment ratio in the schools. Gujarat's government is focusing on privatization and in recent years Gujarat government has given a sanction to open only 145 government schools and 1500 private schools in all 33 districts (DNA correspondent, 2018).

FUND ALLOCATION

Generally, the fluctuating trend usually observed because of improper fund allocation in different sectors. While the trend analysis of education expenditure has been observed that Gujarat government allocating education funds in 3 major heads.

- **Tribal Development**
  - **General Education (2202)**
  - **Technical Education (2203)**
  - **Education, Sports, Art and Culture (4202)**
- **Road and Building part 1**
- **Social justice and empowerment part 2**

The education funds allocated in these heads are either capital expenditure or a revenue expenditure. Trend analysis of Revenue expenditure of Gujarat indicates that the growth rate of revenue expenditure has more or less been on a stable trend ranging between 15 and 20 per cent. As against the stable trend of revenue expenditure, the growth rate of capital expenditure on education is found to be an undulating trend. However, the growth rate of capital expenditure has been on a positive path but with a fluctuating trend through the year 1998-2017. From the above analysis, it has been found that the public expenditure on education, capital expenditure and revenue expenditure of Gujarat shows a fluctuating trend.

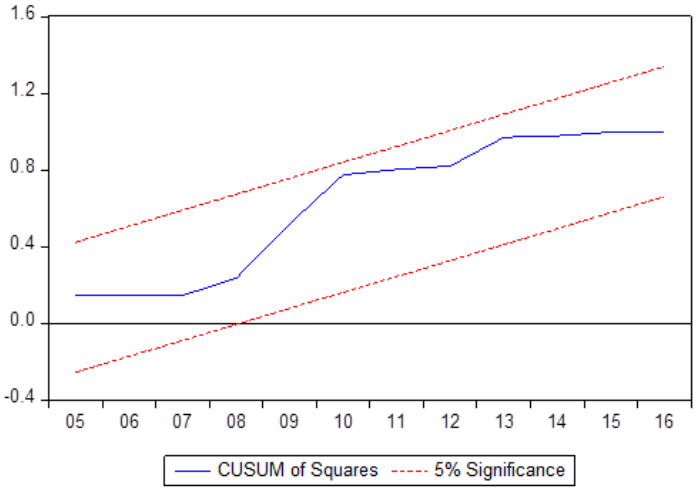


Covariance Correlation Probability	EDU	GSDP
EDU	54908183 1.000000 -----	
GSDP	2.69E+11 0.986961 0.0000	1.36E+15 1.000000 -----

The correlation analysis states that there is a positive correlation and moved in an upward direction (i.e. PEE and GSDP are positively correlated

Regression analysis is used to predict the statistical relation between the dependent variable and independent variable. The coefficient indicates that if the Gujarat government spends 1 rupee on education, then the GSDP will increase by 3.72 rupees. The study found spurious regression (R^2 =0.97 or 97 per cent). Because of spurious regression ADF test, bound test and ARDL has been used. The result shows that the short-term coefficient of education expenditure is positive and the logarithmic transformation shows the

elasticity in the variables. It shows that a 1% increase in education expenditure leads to an increase of 0.036% in Gujarat's gross state domestic product. This means that by increasing the education expenditure by 1%, Gujarat's economic growth is increased by 3.6%. The above model is tested with the help of the CUSUM square.



The result of Cusum indicates that stability of the long run relationship between the education expenditure and GSDP of Gujarat and the values lie within the 5% level of significance.

OBJECTIVE 2: TO REVIEW THE MACROECONOMICS EDUCATION POLICIES IN GUJARAT

Macroeconomic analysis of education policy has been done with the help of primary data. The information has been collected through structured questionnaires, focused group discussion, interview method, observation technique etc.

For the selection of the districts, stratified random sampling has been used. All the districts are classified based on literacy rate and 3 categories are made high literate, moderate and low literate districts. At the second stage, 2 Taluka from each district have been selected. Total 6 Taluka has been selected and from each Taluka 1 village school from the rural area and 1 ward of the urban area has been selected for a survey. The selected district for this study is presented as follows;

Total 6 primary schools are undergoing this research. Total 120 students, from standard 5th, 6th, 7th and 8th and 12 teachers are selected. The schools, teachers and students are selected with the help of a random sampling technique.

In this research, the Gyankunj project has been decided to evaluate because it integrated the concept of computer-aided learning (CAL) and Information and Communication Technology (ICT) using multimedia and technology tools for teaching-learning processes. With the help of this research, an attempt has been made to analyze how effectively the Gyankunj has been implemented. For the analysis of the Gyankunj project, the data were collected from teachers and students. The collected data has been analysed with the help of descriptive statistics.

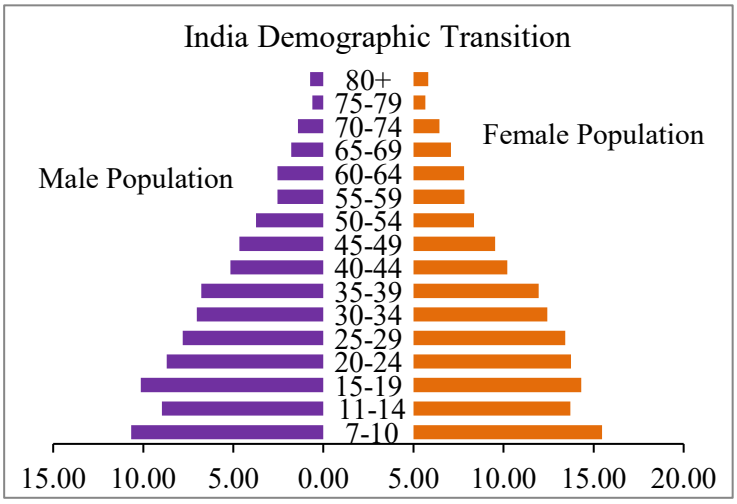
Descriptive Statistics of Students responses		
	Mean	Std. Deviation
Teacher face problem in handling ICT	2.68	.954
The teacher explains content manually	2.98	.970
All subject teacher uses ICT in class	2.91	1.100
The teacher sometimes explain content manually	3.28	.638
A teacher always explain content manually	2.5	1.066
ICT help in strengthen memory	2.94	.690
Easy evaluation	2.87	.829
Improvement in attendance	3.25	.853
The audio/video method is easy to understand	3.21	.829
Sound/picture quality is not satisfactory	3.39	.714
ICT cover all the topics	2.03	1.057
Participation in class has increased	2.93	.842

Descriptive Statistics of Teacher Responses		
	Mean	Std. Deviation
Students are attentive in class	2.92	1.084
Easy to evaluate students	2.67	.985
Students participation has increased	2.92	1.084
ICT is time-consuming	3.25	.965
ICT bridging gap	2.83	1.267
Internet connectivity is not satisfactory	2.75	.965
Better understanding in students	2.67	.888
Not Comfortable with technology	3.08	.900
Use of the Internet	3.00	.953
Use of PPT	3.25	.866
The technology tool is not satisfactory	2.83	1.193
Students attendance has improved	2.42	1.084

The analysis revealed that the implementation of ICT into the classroom has positively impacted students and teachers while traditional teaching has less impact. ICT provides equal opportunities for every student to be more active and have a better understanding. The teaching-learning become more interesting. Though Technology-based learning is satisfactory but faces some issue like internet connectivity, issue related to the technological tool (Speaker, video quality, audio quality.)

OBJECTIVE 3: TO DETERMINE THE EFFICIENCY OF PUBLIC EXPENDITURE ON EDUCATION IN INDIA

The spending in the education sector determines the priority given by the government. So, this becomes important to analyze which government is efficient in spending on the education sector. Only efficient government spending can generate adequate returns in terms of contribution to economic growth (Sonje,



2018). The research analysis focused on 4 variables are Public expenditure on education, Population, Enrolment and Literacy. The actual education expenditure is taken from 2011 to 14 budgeted analysis. The expenditure on education is derived from Primary education, secondary education, and tertiary education. These variables are calculated for the age cohort which distributed in three groups i.e 6-14, 15-19 and 20-24. This population has the highest share in India as well as the States. This study focuses on this age cohort.

To know the efficiency score of an Indian state, all the sates are divided into low-income group and high-income group. The efficiency score is calculated with the help of the CCR input-oriented model under Data Envelopment Analysis (DEA).

$$\max\ h_x = \frac{\sum_{r=1}^{s} u_r\, y_{ro}}{\sum_{i=1}^{m} v_i\, x_{io}}$$

Subject to

$$\frac{\sum_{r=1}^{s} u_r\, y_{rj}}{\sum_{i=1}^{m} v_i\, x_{ij}} \leq 1$$

$$\max h_x = \sum_{i=1}^{m} \omega_i\, x_{ij}$$

Subject to

$$\sum_{r=1}^{s} \mu_r y_{rj} - \sum_{i=1}^{m} \omega_i x_{ij} \geq 0$$

The result of the technical efficiency score

Table 1 Technical Efficiency score obtained by the low-Income group						
Input Oriented CCR Model						
Group	**DMU No.**	**DMU Name**	**Efficiency Model 1**	**RTS**	**Efficiency Model 2**	**RTS**
School Education (Primary and Secondary)	1	Andhra Pradesh	0.07638	Increasing	0.01744	Increasing
	2	Assam	0.06262	Increasing	0.04372	Increasing
	3	Bihar	0.18434	Increasing	0.00922	Increasing
	4	Chhattisgarh	0.09330	Increasing	0.04197	Increasing
	5	Jharkhand	0.14682	Increasing	0.03152	Increasing
	6	Madhya Pradesh	0.13641	Increasing	0.01266	Increasing
	7	Manipur	0.08174	Increasing	0.41995	Increasing
	8	Meghalaya	0.06249	Increasing	0.28955	Increasing
	9	Mizoram	0.03783	Increasing	1.00000	Constant
	10	Nagaland	0.03519	Increasing	0.63195	Increasing
	11	Odisha	0.08330	Increasing	0.02861	Increasing
	12	Rajasthan	0.09097	Increasing	0.01480	Increasing
	13	Tripura	0.04357	Increasing	0.33357	Decreasing
	14	Uttar Pradesh	1.00000	Constant	0.00462	Increasing
	15	West Bengal	0.08713	Increasing	0.01303	Increasing
		Mean	0.14814		0.19284	
Higher Education	1	Andhra Pradesh	0.06542	Increasing	0.00852	Increasing
	2	Assam	0.03064	Increasing	0.03313	Increasing
	3	Bihar	0.04528	Increasing	0.01522	Increasing
	4	Chhattisgarh	0.05667	Increasing	0.04624	Increasing
	5	Jharkhand	0.03700	Increasing	0.07234	Increasing
	6	Madhya Pradesh	0.09189	Increasing	0.01208	Increasing
	7	Manipur	0.04312	Increasing	0.34411	Decreasing

	8	Meghalaya	0.02896	Increasing	0.52374	Decreasing
	9	Mizoram	0.01299	Increasing	1.00000	Constant
	10	Nagaland	0.04767	Increasing	0.74378	Decreasing
	11	Odisha	0.03773	Increasing	0.01486	Increasing
	12	Rajasthan	0.10933	Increasing	0.01225	Increasing
	13	Tripura	0.03645	Increasing	0.38168	Increasing
	14	Uttar Pradesh	1.00000	Constant	0.00597	Increasing
	15	West Bengal	0.03842	Increasing	0.01183	Increasing
		Mean	0.11210		0.21505	

Table 2 Technical Efficiency score obtained by high-Income group

Input Oriented CCR Model						
Group	DMU No.	DMU Name	Efficiency Model 1	RTS	Efficiency Model 2	RTS
School Education (Primary and Secondary)	1	Arunachal Pradesh	1.00000	Constant	0.36946	Increasing
	2	Goa	0.54733	Increasing	1.00000	Constant
	3	Gujarat	1.00000	Constant	0.01238	Increasing
	4	Haryana	0.82461	Increasing	0.02922	Increasing
	5	Himachal Pradesh	0.56083	Increasing	1.00000	Constant
	6	Karnataka	0.99237	Increasing	0.01283	Increasing
	7	Kerala	0.68285	Increasing	1.00000	Constant
	8	Maharashtra	1.00000	Constant	0.00670	Increasing
	9	Punjab	1.00000	Constant	0.02690	Increasing
	10	Sikkim	1.00000	Constant	1.00000	Constant
	11	Tamil Nadu	1.00000	Constant	0.01300	Decreasing
	12	Uttarakhand	0.08711	Increasing	0.06842	Decreasing
		Mean	0.80792		0.37824	
Higher Education	1	Arunachal Pradesh	1.00000	Constant	1.00000	Constant
	2	Goa	0.26629	Increasing	0.68692	Decreasing
	3	Gujarat	0.60519	Decreasing	0.01794	Increasing

	4	Haryana	0.31330	Decreasing	0.02532	Increasing
	5	Himachal Pradesh	0.06004	Increasing	0.11535	Increasing
	6	Karnataka	0.59937	Decreasing	0.01266	Increasing
	7	Kerala	0.29453	Decreasing	0.03125	Decreasing
	8	Maharashtra	1.00000	Constant	0.00610	Increasing
	9	Punjab	1.00000	Constant	0.03283	Increasing
	10	Sikkim	1.00000	Constant	1.00000	Constant
	11	Tamil Nadu	1.00000	Constant	0.00759	Increasing
	12	Uttarakhand	0.14420	Increasing	0.08743	Decreasing
		Mean	0.60691		0.25195	

The results of this objective reveal the disparity in terms of the efficiency of Indian states. The states with low per capita income are less efficient than the higher per capita income state. It also revealed that an increase in enrollment is likely to increase literacy. And the increase in enrollment is possible only with the increase in public expenditure on education. Comparative pictures of income groups show that higher income groups are more efficient in maximizing their efficiency in terms of literacy and enrollment. The state which performs better in terms of literacy and enrollment are developed states but in terms of per-pupil expenditure, they lack behind. The reason behind this is that the highly developed states are more focused on Private expenditure.

OBJECTIVE 4: TO ANALYSE THE RELATIONSHIP BETWEEN PUBLIC EXPENDITURE ON EDUCATION AND HUMAN DEVELOPMENT INDEX

This research attempts to capture variation in human progress at the state level by estimating HDI. The research also attempts to measure human progress and tries to establish the association between the public expenditure on education with human development for the period 2011-2018 using cross-sectional data for Indian states. The present study assimilates the trend analyses of the human development index and indicators and the causal relationship between development index and public expenditure on education.

To calculate the HDI, the study uses the goalposts table. After that, the dimension indices are calculated. Formula is	The second step is to aggregate the dimension indices for calculating the HDI. The aggregate of the HDI is the geometric mean of the three-	After calculating the Human Development Index, the

$\frac{Actual\ Value - Minimum\ Value}{Maximum\ Value - Minimum\ value}$	dimensional indices, which are calculated as follows: $HDI = \sqrt[3]{I_{Health} * I_{Education} * I_{Income}}$	Regression model has been specified. **HDI= f (PCNSDP, EE/DE)**

The computation of HDI and its dimension with rank are as follows

Table 2 Computation of HDI, Health Index, Edu Index and Income Index with rank and Regression analysis.

States	Health Index	Edu Index	Income Index	HDI	Rank	Edu Exp	R square	P-Value
	1	2	3	4	5	6	7	8
Andhra Pradesh	0.763	0.511	0.359	0.519 (H)	11	13.33 (18)	0.63	0.0002
Assam	0.7	0.527	0.276	0.467 (L)	18	22.83 (1)	0.52	0.0001
Bihar	0.766	0.463	0.173	0.395 (L)	20	18.07 (5)	0.42	0.0001
Chhattisgarh	0.695	0.504	0.318	0.481 (M)	17	18.53 (4)	0.006	0.75
Gujarat	0.762	0.661	0.409	0.59 (H)	1	14.72 (13)	0.31	0.023
Haryana	0.76	0.592	0.43	0.578 (H)	2	14.52 (14)	0.39	0.009
Himachal Pradesh	0.805	0.593	0.401	0.576 (H)	3	16.98 (6)	0.40	0.0003
J & K	0.823	0.579	0.303	0.524 (M)	10	13.2 (20)	0.74	0.03
Jharkhand	0.737	0.556	0.303	0.499 (L)	15	13.55 (17)	0.27	0.07
Karnataka	0.755	0.552	0.406	0.553 (H)	7	13.82 (16)	0.21	0.01
Kerala	0.848	0.524	0.412	0.568 (H)	4	16.55 (7)	0.38	0.0006
Madhya Pradesh	0.698	0.67	0.274	0.504 (L)	13	14.35 (15)	0.50	0.0004
Maharashtra	0.803	0.541	0.415	0.565 (H)	5	19.05 (2)	0.53	2.33
Orissa	0.732	0.56	0.305	0.5 (M)	14	14.92 (11)	0.34	0.01
Punjab	0.808	0.532	0.386	0.55 (H)	9	13.23 (19)	0.42	0.00003
Rajasthan	0.743	0.561	0.326	0.514 (M)	12	15.32 (10)	0.23	0.05
Tamil Nadu	0.791	0.525	0.403	0.551 (H)	8	14.92 (11)	0.50	0.00004
Uttar Pradesh	0.689	0.55	0.236	0.447 (L)	19	15.88 (9)	0.93	0.93
Uttrakhand	0.792	0.536	0.42	0.563 (H)	6	19.02 (3)	0.37	0.37
West Bengal	0.782	0.521	0.303	0.498 (M)	16	16.12 (8)	0.01	0.01
ALL INDIA	0.76	0.56	0.64	0.65 (M)	129			

The result of this study indicates that public expenditure on education to development expenditure is statistically significant and has a positive impact on human development. The states with a high level of income perform better in human development except those which are labelled under the vicious cycle.

There are some states which show an improvement in education expenses like Bihar, Assam and Rajasthan despite their low per capita state domestic product and classified under vicious cycle. The states which are classified under the virtuous cycle making education a private good in India rather than being a public good. For prosperous growth and development, every state and central government should give priority to the education sector and spend accordingly**.**

7. CONCLUSION

Public expenditure on education has an important role to play in the growth of the state as well as in India. The analysis of this research shows that public expenditure on education in Gujarat has achieved a positive and constant trend, but with a fluctuation. The educational expenditure of the Gujarat government is diminishing at a constant rate from 1998 to 2017. This study uses regression and correlation analysis to know the relationship between public expenditure on education, economic growth, and human development index. The result shows that public expenditure on education has a positive and significant impact on economic growth in Gujarat and the human development index in India. The result is encouraging, and this encouraging result only possible when the government utilizes education funds efficiently. The Government of Gujarat utilizes these funds efficiently by allocating them in a different head. The government allocates these education funds to different heads so that they can develop these sectors properly. The allocation of the fund in these sectors determines the priority given by the government for that particular sector. When the governments determine their priorities, this means that they are utilizing the fund for the development of schools, buildings, road, electricity power. They also allocate funds to develop the minority community.

The best utilization of education expenditure is determined in terms of effective education policy implementation. The effective education policy brings concrete changes in the education sector. These changes guarantee quality and equality in the education sector. Dyer (1996) cited Nieuwenhuis (1997) who commented on the formulation of policy in South Africa. He said that “the success of an education policy lies in its implementation”. Policy implementation is a complex process, but proper planning and transparency could avoid this complexity. A successful policy implementation involved worth serious research (Dyer, 1996). This worthwhile research builds a sustainable education system, helps in achieving educational development goals and contributes efficiently to lifelong learning (UNESCO). For lifelong learning, efficient spending is necessary. The effective policy implementation and efficient utilization of resources lead to the sustainable growth of an economy.

8. CONTRIBUTION OF THE THESIS

The generalization of the study will be an important effort to explore the contribution of public expenditure on education. The study also focuses on the implementation of GyanKunj in schools in Gujarat. There will be more demand for education soon as the cohort has increased. The demand for technology-based education has also arisen, which is contributing significantly to promoting quality education.

This study will be helpful for the government as school enrollment increases as demand for education increases. So the government needs to spend according to the demand of the population (especially less for rural areas or people in the per capita income group). For researchers and policymakers, the study will help uncover areas that other researchers have not been able to cover.

The present study is focused on the trend analysis of public expenditure on education and get first-hand knowledge about the implementation of educational policies in Gujarat. The study also consists of an analysis of efficient government public expenditure on education and identifies the literacy, enrolment and per-pupil expenditure of Indian states. This study also traces the contribution of public expenditure on education on economic growth and human development index.

The Present study has been conducted on public expenditure while the private sector is also of equivalent importance in economic growth and human development. Due to time constraint, only a few districts of Gujarat has been covered. Future research can be carried out on private expenditure on education and out of pocket expenses can be observed

9. ORGANIZATION OF THESIS

The thesis is organized as follows

Chapter 1 Introduction.

Chapter 2 Literature Review

Chapter 3 Research Methodology.

Chapter 4 Trend Analysis of public expenditure on education and economic growth.

Chapter 5 Macroeconomic analysis of education policy.

Chapter 6 Efficiency of public expenditure on education.

Chapter 7 Public expenditure on education and human development.

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